ABSTRACT OF THE DISCLOSURE

A system and method for synchronizing processors simulated in an architectural simulator for a multiprocessor environment. A synchronous breakpoint is set at a predetermined address location and a code portion targeted for execution on the target multiprocessor environment is launched on the simulator from a fixed location. Upon automatically stepping through a list of processors initialized in the simulator until each of the processors reaches the synchronous breakpoint, run control is returned to the user only after all processors have achieved a synchronous state. Debug operations may ensue thereafter by utilizing a debugger integrated with the architectural simulator.